

HIV Terms Coverage by a Commercial Nomenclature
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Abstract

A formal comparison of physician notes on HIV patients with MEDCIN®¹ was carried out. Terms from patient charts were divided into five groups: History, Physical Examination, Symptoms, Diagnosis and Doctor's Orders. Four types of matches were determined: Exact, Lexical, Semantic and No-Match. Across the five groups, exact matches ranged from 12 to 44 percent, lexical matches from 2 to 11 percent, semantic matches from 9 to 21 percent, and no-matches from 29 to 74 percent.

Introduction

Terminology development for use by physicians has been a growing area of research in the field of medical informatics. There are numerous classification schemes, nomenclatures, and vocabularies commercially available. However, none of these products has been proved to be appropriate for use at the point of care. MEDCIN® is a nomenclature that has been developed for physician use to document patient encounter notes. An attempt was made to determine the concordance of medical records content with MEDCIN®.

Materials and Methods

The electronic version of MEDCIN® version 4.0.3 was used for terms comparison. Terms were selected from paper medical records at the 1917 AIDS Outpatient Clinic. Fifty-two medical records were selected at random. This sample included initial visit notes written by 7 Attending Physicians, 5 Fellows and 2 Nurse Practitioners of the clinic. Terms were collected from all forms documenting an initial visit of the patients. Pre-formatted forms are used to record physical examination, signs and symptoms, problems list, and doctor's orders. Free text forms are used to write progress notes. Both types of forms were used as source documents. All unique terms in each patient chart were included in the final list. Repeating terms across all medical records were tracked with a frequency chart. Pre-coordinated terms were split into meaningful atomic terms. Four types of matches were determined: exact (identical), lexical (grammatically variant) and semantic (same meaning) matches. Terms that did not match any criteria were grouped in the no-match category. MEDCIN® Search within the nomenclature was used

to look for potential matches. A four-phase search strategy was adopted. First an identical term (root word plus modifier) match was determined. If this failed, the term was split and identical matches for individual words were sought. The third choice was to look for a lexical match for the term. The last option was to determine if a semantic match for the term exists. If none of the searches produced positive results, the term was categorized as a no-match. The context of the terms from the notes was maintained during all searches.

Results

A total of 592 terms were collected from the medical charts. Table 1 represents the type of match in each category as a percentage. The last column indicates the distribution of the terms amongst the five groups.

Table 1
Types of Matches Arranged by Term Groups

	E*	L*	S*	N*	T*
History	12	5	9	74	210
Physical Examination	17	7	11	65	122
Symptoms	39	11	21	29	80
Diagnosis	44	5	9	42	76
Doctor's Orders	41	2	17	40	117

*E=Exact Match, L=Lexical Match, S=Semantic Match, N=No-Match, T=Total number of terms in the category

Discussion

The low correspondence between the chart notes and MEDCIN® may be due to very stringent rules set for match, incorrect search algorithm or physician methodology of documentation of patient notes. A similar study conducted at four different types of medical centers concluded that none of the coding schemes or nomenclatures could capture complete clinical content of patient records². Hence, controlled terminologies in healthcare require further work.

References

- (1) Medcomp Systems, Inc. 3-7-2003. Ref Type: Electronic Citation.
- (2) Chute CG, Cohn SP, Campbell KE, Oliver DE, Campbell JR. The content coverage of clinical classifications. For The Computer-Based Patient Record Institute's Work Group on Codes & Structures. J Am Med Inform Assoc 1996; 3(3):224-233.